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Scientific and Technical Information Center

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Requester's Full Name: Kambiz Zand Examiner #: 78582 Date: 07/25/05
 Art Unit: 2132 Phone Number 302 3811 Serial Number: 091632,933
 Mail Box and Bldg/Room Location: 2A19 Results Format Preferred (circle): PAPER DISK E-MAIL
2A15

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Synchronization of Authentication ciphering offset

Inventors (please provide full names): Persson, JoAKim; Smeets, BEN;
MELIN, TOBIAS

Earliest Priority Filing Date: 08/04/2000

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please see Attached Claims, Abstract

& Specification

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 Program. Thank

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Zand

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Online Time: <u>185</u>	Other _____	Other (specify) _____



STIC Search Report

EIC 2100

STIC Database Tracking Number: 160429

TO: Kambiz Zand
Location: RND 2A19
Art Unit : 2132
Tuesday, July 26, 2005

Case Serial Number: 09/632933

From: David Holloway
Location: EIC 2100
RND 4B19
Phone: 2-3528

david.holloway@uspto.gov

Search Notes

Dear Examiner Zand,

Attached please find your search results for above-referenced case.
Please contact me if you have any questions or would like a re-focused search.

David



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S1	6562	BLUETOOTH? OR BLUE()TOOTH OR WIFI OR WAPR OR WIRELESS OR C-ELLULAR OR MOBILE OR 802()11 OR 802()15 OR PICONET? OR GSM OR UMTS OR WLAN?
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S3	1334	SYNCRON? OR SYNCHRON? OR (RENDER? OR MAKE OR MAKING OR MAD-E) () (IDENTICAL? OR SAME? OR EQUIVALENT? OR EQUAL) OR IDENTICALI?
S4	1685	RESYNC? OR COOCCUR? OR CONCUR? OR MATCHING
S5	1803	AUTHENTIC? OR CHALLENGE()RESPONSE? OR CRAM OR LINK()KEY? ? OR KEYPAIR? OR KEY()PAIR?
S6	11955	CURRENT? OR RECENT? OR NEWEST? OR LATEST? OR LAST OR FRESH
S7	4551	SAME OR IDENTICAL OR MATCHING
S8	26	S1 AND (S3 OR S4) AND S5
S9	26	S8 NOT PY>2000
S10	11	S9 NOT PD>20000804
S11	1	S9 NOT RD>20000804

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Set	Items	Description
S1	3574461	BLUETOOTH? OR BLUE()TOOTH OR WIFI OR WAPR OR WIRELESS OR CELLULAR OR MOBILE OR 802()11 OR 802()15 OR PICONET? OR GSM OR UMTS OR WLAN?
S2	10133	ACO OR COF OR (CYPHER? OR CIPHER?) (N) (OFFSET? OR OFF() (SETS OR SET))
S3	403819	SYNCRON? OR SYNCHRON? OR (RENDER? OR MAKE OR MAKING OR MADE) () (IDENTICAL? OR SAME? OR EQUIVALENT? OR EQUAL) OR IDENTICALI?
S4	920946	RESYNC? OR COOCCUR? OR CONCUR? OR MATCHING
S5	489074	AUTHENTIC? OR CHALLENGE()RESPONSE? OR CRAM OR LINK()KEY? ? OR KEYPAIR? OR KEY()PAIR?
S6	176	S2(3N) (CURRENT? OR RECENT? OR NEWEST? OR LATEST? OR LAST OR FRESH)
S7	24	S2(3N) (SAME OR IDENTICAL OR MATCHING)
S8	0	S1(S)S2(4N) (S3 OR S4)
S9	168	S1(S)S2
S10	0	S2(4N) (S3 OR S4) (S)S5
S11	0	S5(S) (S6 OR S7)
S12	17	S1(5N)S2
S13	0	S9(S)S5
S14	2	S9(S) (S3 OR S4)
S15	43	S14 OR S12 OR S7
S16	28	RD (unique items)
S17	16	S16 NOT PY>2000
File 275:	Gale Group Computer DB(TM) 1983-2005/Jul 26 (c) 2005 The Gale Group	
File 47:	Gale Group Magazine DB(TM) 1959-2005/Jul 26 (c) 2005 The Gale group	
File 75:	TGG Management Contents(R) 86-2005/Jul W3 (c) 2005 The Gale Group	
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(c) 2005 The Gale Group
File 810:Business Wire 1986-1999/Feb 28
(c) 1999 Business Wire
File 610:Business Wire 1999-2005/Jul 26
(c) 2005 Business Wire.
File 647:CMP Computer Fulltext 1988-2005/Jul W2
(c) 2005 CMP Media, LLC
File 98:General Sci Abs/Full-Text 1984-2004/Dec
(c) 2005 The HW Wilson Co.
File 148:Gale Group Trade & Industry DB 1976-2005/Jul 26
(c)2005 The Gale Group
File 634:San Jose Mercury Jun 1985-2005/Jul 24
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Set	Items	Description
S1	1314963	BLUETOOTH? OR BLUE()TOOTH OR WIFI OR WAPR OR WIRELESS OR CELLULAR OR MOBILE OR 802()11 OR 802()15 OR PICONET? OR GSM OR UMTS OR WLAN?
S2	6553	ACO OR COF OR (CYPHER? OR CIPHER?) (N) (OFFSET? OR OFF() (SETS OR SET))
S3	357295	SYNCRON? OR SYNCHRON? OR (RENDER? OR MAKE OR MAKING OR MADE) () (IDENTICAL? OR SAME? OR EQUIVALENT? OR EQUAL) OR IDENTICAL?
S4	525499	RESYNC? OR COOCCUR? OR CONCUR? OR MATCHING
S5	58571	AUTHENTIC? OR CHALLENGE()RESPONSE? OR CRAM OR LINK()KEY? ? OR KEYPAIR? OR KEY()PAIR?
S6	5776609	CURRENT? OR RECENT? OR NEWEST? OR LATEST? OR LAST OR FRESH
S7	2799533	SAME OR IDENTICAL OR MATCHING
S8	3	S1 AND S2(3N) (S3 OR S4 OR S6 OR S7)
S9	3	S1 AND S2 AND (S3 OR S4) AND S5
S10	3	S1 AND S2 AND (S6 OR S7) AND S5
S11	173	S1 AND S2
S12	55	S11 AND (S3 OR S4 OR S6 OR S7)
S13	78	S1 AND S5 AND (S3 OR S4) AND (NUMBER? OR PIN OR PSEUDORANDOM? OR RANDOM? OR KEY OR KEYS OR IDENTIFIER?)
S14	133	S8 OR S9 OR S10 OR S12 OR S13
S15	93	RD (unique items)
S16	29	S15 NOT PY>2000
S17	29	S16 NOT PD=20000804:20030804
S18	29	S17 NOT PD=20030804:20050804
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File	99:	Wilson Appl. Sci & Tech Abs 1983-2005/Jun (c) 2005 The HW Wilson Co.
File	95:	TEME-Technology & Management 1989-2005/Jun W3 (c) 2005 FIZ TECHNIK

18/5/1 (Item 1 from file: 8)
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05421697 E.I. No: EIP99114913470

Title: Dynamic participation in a secure conference scheme for mobile communications

Author: Hwang, Min-Shiang

Corporate Source: Chaoyang Univ of Technology, Wufeng, Taiwan

Source: IEEE Transactions on Vehicular Technology v 48 n 5 1999. p 1469-1474

Publication Year: 1999

CODEN: ITVTAB ISSN: 0018-9545

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical)

Journal Announcement: 0001W2

Abstract: We propose a scheme to implement secure digital **mobile** communications. The scheme can both enable multiple users to hold a secure teleconference and also resolve the problem of allowing a participant to join dynamically or to quit a teleconference already in progress. Essentially, teleconference is a **synchronous** collaboration session in which participants at remote locations cooperate through **wireless** communications. Two requirements for the system are: privacy and **authentication**. Privacy signifies that an eavesdropper cannot intercept conversations of a conference. **Authentication** ensures that the service is not obtained fraudulently in order to avoid usage charge usage. We present a conference **key** distribution scheme for digital **mobile** communications, according to which users can share a common secret **key** to hold a secure teleconference over a public channel. The participants need not alter their secret information when a participant joins late or quits the conference early. (Author abstract) 24 Refs.

Descriptors: *Cellular radio systems; Digital signal processing; Teleconferencing; Cryptography; **Wireless** telecommunication systems; Data privacy

Identifiers: Secure digital **mobile** communications

Classification Codes:

716.3 (Radio Systems & Equipment); 716.1 (Information & Communication Theory)

716 (Radar, Radio & TV Electronic Equipment)

71 (ELECTRONICS & COMMUNICATIONS)

18/5/2 (Item 2 from file: 8)
DIALOG(R) File 8: Ei Compendex(R)
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05350285 E.I. No: EIP99094765916

Title: Proposal of secure remote access using encryption

Author: Kawase, Tetsuya; Watanabe, Akira; Sasase, Iwao

Corporate Source: Keio Univ, Yokohama, Jpn

Conference Title: Proceedings of the IEEE GLOBECOM 1998 - The Bridge to the Global Integration

Conference Location: Sydney, NSW, Aust Conference Date: 19981108-19981112

Sponsor: IEEE Communications Society; Telstra; ERICSSON; SIEMENS; et al.

E.I. Conference No.: 55358

Source: Conference Record / IEEE Global Telecommunications Conference v 2 1998. p 868-873

Publication Year: 1998

CODEN: CRIEET

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical)

Journal Announcement: 9910W2

Abstract: On a remote access environment, strong **authentication** of the remote user is required since the danger of stealing of **authentication** devices is very high. In this paper, we propose a secure remote access system appropriate for the remote access environment. Two **authentication** schemes are used to reduce the danger of stealing of **authentication** devices. One is the **authentication** using the public **key** cryptography. The public **key** cryptography is stored in the IC card of the remote user and the IC card is locked by the **PIN**. The another scheme is the one-time pattern **authentication** which is a sort of challenge and response. Simultaneously, simple **key** delivery is performed with these **authentication** protocol. An evaluation of our proposed scheme proves the feasibility and the efficiency as compared with the conventional system using the one-time password and Diffie-Hellman **key** agreement protocol. (Author abstract) 3 Refs.

Descriptors: *Mobile computing; Security of data; Cryptography; Network protocols; Pattern **matching**

Identifiers: Secure remote access system; One-time pattern **authentication**

Classification Codes:

723.2 (Data Processing); 723.5 (Computer Applications)

716 (Radar, Radio & TV Electronic Equipment); 723 (Computer Software)

71 (ELECTRONICS & COMMUNICATIONS); 72 (COMPUTERS & DATA PROCESSING)

18/5/13 (Item 6 from file: 2)
DIALOG(R) File 2:INSPEC
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6379114 INSPEC Abstract Number: B1999-11-6250F-084

Title: Dynamic participation in a secure conference scheme for mobile communications

Author(s): Min-Shiang Hwang

Author Affiliation: Dept. of Inf. Manage., Chaoyang Univ. of Technol., Wufeng, Taiwan

Journal: IEEE Transactions on Vehicular Technology vol.48, no.5 p. 1469-74

Publisher: IEEE,

Publication Date: Sept. 1999 Country of Publication: USA

CODEN: ITVTAB ISSN: 0018-9545

SICI: 0018-9545(199909)48:5L:1469:DPSC;1-6

Material Identity Number: I112-1999-005

U.S. Copyright Clearance Center Code: 0018-9545/99/\$10.00

Document Number: S0018-9545(99)07367-3

Language: English Document Type: Journal Paper (JP)

Treatment: Theoretical (T)

Abstract: We propose a scheme to implement secure digital **mobile** communications. The scheme can both enable multiple users to hold a secure teleconference and also resolve the problem of allowing a participant to join dynamically or to quit a teleconference already in progress. Essentially, teleconference is a **synchronous** collaboration session in which participants at remote locations cooperate through **wireless** communications. Two requirements for the system are: privacy and **authentication**. Privacy signifies that an eavesdropper cannot intercept conversations of a conference. **Authentication** ensures that the service is not obtained fraudulently in order to avoid usage charge usage. We present a conference **key** distribution scheme for digital **mobile** communications, according to which users can share a common secret **key** to hold a secure teleconference over a public channel. The participants need not alter their secret information when a participant joins late or quits the conference early. (24 Refs)

Subfile: B

Descriptors: cryptography; digital radio; land **mobile** radio; message **authentication**; telecommunication security; teleconferencing

Identifiers: dynamic participation; secure conference scheme; **mobile** communications; digital **mobile** communications; multiple users; secure teleconference; **synchronous** collaboration session; remote locations; wireless communications; privacy; **authentication**; eavesdropper; conversations; fraud; usage charge usage; conference **key** distribution scheme; common secret **key**; public channel

Class Codes: B6250F (Mobile radio systems); B6210P (Teleconferencing); B6120D (Cryptography)

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» Key

IEEE JNL	IEEE Journal or Magazine
IEEE JNL	IEEE Journal or Magazine
IEEE CNF	IEEE Conference Proceeding
IEEE CNF	IEEE Conference Proceeding
IEEE STD	IEEE Standard

Select Article Information

- ☐ 1. **IEEE Std 802.15.1 IEEE Standard for Information technology- Telecommu Information exchange between systems- Local and metropolitan area net requirements Part 15.1: Wireless Medium Access Control (MAC) and Phy (PHY) Specifications for Wireless Personal Area Networks (WPANs)**
IEEE Std 802.15.1-2002
2002 Page(s):0_1 - 0_3
[AbstractPlus](#) | Full Text: [PDF](#)(9782 KB) IEEE STD
- ☐ 2. **Hardware Implementation of Bluetooth security**
Kitsos, P.; Sklavos, N.; Papadomanolakis, K.; Koufopavlou, O.;
Pervasive Computing, IEEE
Volume 2, Issue 1, Jan-Mar 2003 Page(s):21 - 29
Digital Object Identifier 10.1109/MPRV.2003.1186722
[AbstractPlus](#) | Full Text: [PDF](#)(1744 KB) IEEE JNL
- ☐ 3. **An analysis of Bluetooth security vulnerabilities**
Hager, C.T.; Midkiff, S.F.;
Wireless Communications and Networking, 2003. WCNC 2003. 2003 IEEE
Volume 3, 16-20 March 2003 Page(s):1825 - 1831 vol.3
Digital Object Identifier 10.1109/WCNC.2003.1200664
[AbstractPlus](#) | Full Text: [PDF](#)(384 KB) IEEE CNF
- ☐ 4. **A Key Establishment Protocol for Bluetooth Scatternets**
Huaizhi Li; Singhal, M.;
Distributed Computing Systems Workshops, 2005. 25th IEEE International Cor
06-10 June 2005 Page(s):610 - 616
Digital Object Identifier 10.1109/ICDCSW.2005.14
[AbstractPlus](#) | Full Text: [PDF](#)(95 KB) IEEE CNF
- ☐ 5. **A software architecture for open service gateways**
Gong, L.;
Internet Computing, IEEE
Volume 5, Issue 1, Jan.-Feb. 2001 Page(s):64 - 70
Digital Object Identifier 10.1109/4236.895144
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(196 KB) IEEE JNL
- ☐ 6. **Microwave surfing. Wireless networks: an electronic battlefield?**

Bansal, R.;
Microwave Magazine, IEEE
Volume 2, Issue 4, Dec. 2001 Page(s):32 - 34
Digital Object Identifier 10.1109/6668.969933
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(310 KB) IEEE JNL

- ☐ **7. Asia Pacific abstracts**
Microwave and Wireless Components Letters, IEEE [see also IEEE Microwave Wave Letters]
Volume 12, Issue 12, Dec. 2002 Page(s):513 - 578
Digital Object Identifier 10.1109/LMWC.2002.804912
[AbstractPlus](#) | Full Text: [PDF](#)(658 KB) IEEE JNL

- ☐ **8. Energy-efficient DSPs for wireless sensor networks**
Wang, A.; Chandrakasan, A.;
Signal Processing Magazine, IEEE
Volume 19, Issue 4, July 2002 Page(s):68 - 78
Digital Object Identifier 10.1109/MSP.2002.1012351
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(2584 KB) IEEE JNL

- ☐ **9. WLAN security: current and future**
Park, J.S.; Dicoi, D.;
Internet Computing, IEEE
Volume 7, Issue 5, Sept.-Oct. 2003 Page(s):60 - 65
Digital Object Identifier 10.1109/MIC.2003.1232519
[AbstractPlus](#) | [References](#) | Full Text: [PDF](#)(376 KB) IEEE JNL

- ☐ **10. Wearable communities: augmenting social networks with wearable comp**
Kortuem, G.; Segall, Z.;
Pervasive Computing, IEEE
Volume 2, Issue 1, Jan-Mar 2003 Page(s):71 - 78
Digital Object Identifier 10.1109/MPRV.2003.1186728
[AbstractPlus](#) | Full Text: [PDF](#)(1181 KB) IEEE JNL

- ☐ **11. Using smart phones to access site-specific services**
Toye, E.; Sharp, R.; Anil Madhavapeddy; Scott, D.;
Pervasive Computing, IEEE
Volume 4, Issue 2, Jan.-March 2005 Page(s):60 - 66
Digital Object Identifier 10.1109/MPRV.2005.44
[AbstractPlus](#) | Full Text: [PDF](#)(1928 KB) IEEE JNL

- ☐ **12. Social serendipity: mobilizing social software**
Eagle, N.; Pentland, A.;
Pervasive Computing, IEEE
Volume 4, Issue 2, Jan.-March 2005 Page(s):28 - 34
Digital Object Identifier 10.1109/MPRV.2005.37
[AbstractPlus](#) | Full Text: [PDF](#)(1160 KB) IEEE JNL

- ☐ **13. 3D simultaneous localization and modeling from stereo vision**
Garcia, M.A.; Solanas, A.;
Robotics and Automation, 2004. Proceedings. ICRA '04. 2004 IEEE International
Volume 1, 2004 Page(s):847 - 853 Vol.1
Digital Object Identifier 10.1109/ROBOT.2004.1307255
[AbstractPlus](#) | Full Text: [PDF](#)(693 KB) IEEE CNF

- ☐ **14. Implementation and evaluation of a low-power sound-based user activity system**
Stager, M.; Lukowicz, P.; Troster, G.;

Wearable Computers, 2004. ISWC 2004. Eighth International Symposium on
Volume 1, 31 Oct.-3 Nov. 2004 Page(s):138 - 141
Digital Object Identifier 10.1109/ISWC.2004.25

[AbstractPlus](#) | Full Text: [PDF\(336 KB\)](#) IEEE CNF

- ☐ **15. Table of Contents**
Circuits and Systems, 2004. ISCAS '04. Proceedings of the 2004 International
Volume 5, 23-26 May 2004 Page(s):xvii - xi
Full Text: [PDF\(444 KB\)](#) IEEE CNF
- ☐ **16. Table of contents**
Circuits and Systems, 2004. ISCAS '04. Proceedings of the 2004 International
Volume 1, 23-26 May 2004 Page(s):xvii - XXII
Full Text: [PDF\(444 KB\)](#) IEEE CNF
- ☐ **17. Table of Contents**
Circuits and Systems, 2004. ISCAS '04. Proceedings of the 2004 International
Volume 4, 23-26 May 2004 Page(s):xvii - XXII
Full Text: [PDF\(444 KB\)](#) IEEE CNF
- ☐ **18. Table of Contents**
Circuits and Systems, 2004. ISCAS '04. Proceedings of the 2004 International
Volume 3, 23-26 May 2004 Page(s):xvii - XXII
Full Text: [PDF\(444 KB\)](#) IEEE CNF
- ☐ **19. Table of contents**
Circuits and Systems, 2004. ISCAS '04. Proceedings of the 2004 International
Volume 2, 23-26 May 2004 Page(s):xvii - XXII
Full Text: [PDF\(444 KB\)](#) IEEE CNF
- ☐ **20. Demonstrating vulnerabilities in Bluetooth security**
Hager, C.T.; Midkiff, S.F.;
Global Telecommunications Conference, 2003. GLOBECOM '03. IEEE
Volume 3, 1-5 Dec. 2003 Page(s):1420 - 1424 vol.3
Digital Object Identifier 10.1109/GLOCOM.2003.1258472
[AbstractPlus](#) | Full Text: [PDF\(308 KB\)](#) IEEE CNF
- ☐ **21. 2003 IEEE International Conference On Systems, Man And Cybernetics**
Systems, Man and Cybernetics, 2003. IEEE International Conference on
Volume 3, 5-8 Oct. 2003 Page(s):i - lii
[AbstractPlus](#) | Full Text: [PDF\(2932 KB\)](#) IEEE CNF
- ☐ **22. 2003 IEEE International Conference on Systems, Man and Cybernetics**
Systems, Man and Cybernetics, 2003. IEEE International Conference on
Volume 1, 5-8 Oct. 2003 Page(s):i - lxiv
Digital Object Identifier 10.1109/ICSMC.2003.1243782
[AbstractPlus](#) | Full Text: [PDF\(3062 KB\)](#) IEEE CNF
- ☐ **23. 2003 IEEE International Conference On Systems, Man And Cybernetics**
Systems, Man and Cybernetics, 2003. IEEE International Conference on
Volume 4, 5-8 Oct. 2003 Page(s):i - lii
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Set	Items	Description
S1	362427	BLUETOOTH? OR BLUE()TOOTH OR WIFI OR WAPR OR WIRELESS OR CELLULAR OR MOBILE OR 802()11 OR 802()15 OR PICONET? OR GSM OR UMTS OR WLAN?
S2	7505	ACO OR COF OR (CYPHER? OR CIPHER?) (N) (OFFSET? OR OFF() (SETS OR SET))
S3	121234	SYNCRON? OR SYNCHRON? OR (RENDER? OR MAKE OR MAKING OR MADE) () (IDENTICAL? OR SAME? OR EQUIVALENT? OR EQUAL) OR IDENTICALI?
S4	196877	RESYNC? OR COOCCUR? OR CONCUR? OR MATCHING
S5	40585	AUTHENTIC? OR CHALLENGE()RESPONSE? OR CRAM OR LINK()KEY? ? OR KEYPAIR? OR KEY()PAIR?
S6	972581	CURRENT? OR RECENT? OR NEWEST? OR LATEST? OR LAST OR FRESH
S7	1334890	SAME OR IDENTICAL OR MATCHING
S8	12	S1(3N)S2
S9	5	S2(5N) (S3 OR S4)
S10	48	S2(S) (S3 OR S4) (S) (S6 OR S7)
S11	113	S1(10N) (S4 OR S3) (10N)S5
S12	19	S11 AND IC=H04L-009
S13	10	S10 AND IC=(G06F OR H04L)
S14	44	S8 OR S9 OR S12 OR S13
S15	1	S2(2N) (S6 OR S7) (S)S5
S16	62	S2(2N) (S6 OR S7)
S17	2	S1(10N)S2(10N) (S6 OR S7 OR S3 OR S4)
S18	4	S16(S)S1
S19	1	S16(S)S5
S20	8	S16 AND IC=(G06F OR H04L)
S21	84	S8 OR S9 OR S10 OR S12 OR S13 OR S15 OR S17 OR S18 OR S19
S22	30	S21 AND IC=(G06F OR H04L)
S23	30	IDPAT (sorted in duplicate/non-duplicate order)
S24	30	IDPAT (primary/non-duplicate records only)

File 348:EUROPEAN PATENTS 1978-2005/Jul W03

(c) 2005 European Patent Office

File 349:PCT FULLTEXT 1979-2005/UB=20050721,UT=20050714

(c) 2005 WIPO/Univentio

24/3,K/2 (Item 2 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
(c) 2005 European Patent Office. All rts. reserv.

01142717

SECURE PROCESSING FOR AUTHENTICATION OF A WIRELESS COMMUNICATIONS DEVICE
SICHERE VERARBEITUNG FUR DIE AUTHENTIFIZIERUNG EINES DRAHTLOSEN
KOMMUNIKATIONSGERATS
TRAITEMENT PROTEGE PERMETTANT D'AUTHENTIFIER UN DISPOSITIF DE COMMUNICATION
SANS FIL

PATENT ASSIGNEE:

QUALCOMM INCORPORATED, (910897), 5775 Morehouse Drive, San Diego, CA
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PATENT (CC, No, Kind, Date): EP 1106000 A1 010613 (Basic)
EP 1106000 B1 050622
WO 2000011835 000302

APPLICATION (CC, No, Date): EP 99948053 990819; WO 99US19199 990819

PRIORITY (CC, No, Date): US 136894 980819

DESIGNATED STATES: DE; FR; GB

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: **H04L-009/32** ; H04Q-007/30

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200525	1933
CLAIMS B	(German)	200525	1852
CLAIMS B	(French)	200525	2191
SPEC B	(English)	200525	4033
Total word count - document A			0
Total word count - document B			10009
Total word count - documents A + B			10009

INTERNATIONAL PATENT CLASS: **H04L-009/32** ...

...SPECIFICATION system and the wireless communications device share another random number. The authentication system and the **wireless** communications device each use the SSD and this other random number to generate an **authentication** result. The **wireless** communications device is **authenticated** if it transfers a **matching authentication** result to the **authentication** system. Although technically possible, it is not computationally feasible to derive the A-Key from the **authentication** result considering the vast amount of computing power and time required. The authentication system maintains...

24/3,K/22 (Item 22 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2005 WIPO/Univentio. All rts. reserv.

00844636 **Image available**

METHOD AND SYSTEM FOR GENERATING A SEQUENCE NUMBER TO BE USED FOR AUTHENTICATION

PROCEDE ET SYSTEME PERMETTANT DE PRODUIRE UN NUMERO DE SEQUENCE DEVANT ETRE UTILISE A DES FINS D'AUTHENTIFICATION

Patent Applicant/Assignee:

NOKIA NETWORKS OY, Keilalahdentie 4, FIN-02150 Espoo, FI, FI (Residence),
FI (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

NIEMI Valtteri, Topeliuksenkatu 32 G 11, FIN-00290 Helsinki, FI, FI
(Residence), FI (Nationality), (Designated only for: US)

LAKSHMESHVAR Shreekanth, Etunientie 4 B 13, FIN-02230 Espoo, FI, FI
(Residence), IN (Nationality), (Designated only for: US)

KOVANEN Tero, Sahkoraitti 4 A 12, FIN-33720 Tampere, FI, FI (Residence),
FI (Nationality), (Designated only for: US)

Legal Representative:

GRILL Matthias (et al) (agent), Tiedtke-Bahling-Kinne et al., Bavariaring
4, D-80336 Munich, DE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200178306 A1 20011018 (WO 0178306)

Application: WO 2000EP3093 20000406 (PCT/WO EP0003093)

Priority Application: WO 2000EP3093 20000406

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES
FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU
LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT
TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 5276

Main International Patent Class: **H04L-009/12**

Fulltext Availability:

Detailed Description

Detailed Description

... static, and updates are only performed when new subscribers are entered to the database. In **UMTS** (Universal **Mobile** Telecommunications System), the sequence numbers used for **authentication** should be individual ones because of re **synchronisation**, and should therefore be stored after every **authentication** vector generation. This writing causes a high database load and may also decrease the reliability...agreement.

5

The invention is applicable to any system in which a sequence number-based **authentication** scheme is used, and a possibility for re- **synchronisation** may be provided, and may for instance be used in an **UMTS** system..

The invention reduces the amount of writing operations of the database storing the information...user authentication request) and AUTS which contains the (eventually concealed) sequence number SQNusjm of the **mobile** station MS1.

When the **authentication** centre of the home network receives such an **authentication** data request with " **synchronisation** failure indication", it acts as follows.

1) the **authentication** centre of the home network HE 4 retrieves SQNusjm by computing $f_5K(MACS)$, if concealed...

24/3,K/26 (Item 26 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
(c) 2005 WIPO/Univentio. All rts. reserv.

00771565 **Image available**

**METHOD AND APPARATUS FOR SECURELY TRANSMITTING DISTRIBUTED RAND SIGNALS FOR
USE IN MOBILE STATION AUTHENTICATION
PROCEDE ET APPAREIL DESTINES A EMETTRE DE MANIERE SURE DES SIGNAUX
DISTRIBUES DE VALEUR DE DEFI A USAGE D'AUTHENTIFICATION DE STATION
MOBILE**

Patent Applicant/Assignee:

QUALCOMM INCORPORATED, 5775 Morehouse Drive, San Diego, CA 92121-1714, US
, US (Residence), US (Nationality)

Inventor(s):

ROSE Gregory G, 6 Kingston Avenue, Mortlake, NSW 2137, AU

Legal Representative:

WADSWORTH Philip R, Qualcomm Incorporated, 5775 Morehouse Drive, San
Diego, CA 92121-1714, US

Patent and Priority Information (Country, Number, Date):

Patent: WO 200105091 A1 20010118 (WO 0105091)

Application: WO 2000US18687 20000707 (PCT/WO US0018687)

Priority Application: US 99350213 19990709

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT
LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 7274

Main International Patent Class: **H04L-009/32**

English Abstract

A method and apparatus for generating and communicating random challenge values to **mobile** stations is disclosed that does not lose the unpredictability of a truly random number but can be simply and economically **synchronized** across **cellular** systems. The method and apparatus updates a binary number that will be used in **cellular** telephone system **authentication** procedures by applying a first algorithm to a plurality of most significant bits of a...

Set	Items	Description
S1	382590	BLUETOOTH? OR BLUE()TOOTH OR WIFI OR WAPR OR WIRELESS OR CELLULAR OR MOBILE OR 802()11 OR 802()15 OR PICONET? OR GSM OR UMTS OR WLAN?
S2	1845	ACO OR COF OR (CYPHER? OR CIPHER?) (N) (OFFSET? OR OFF() (SETS OR SET))
S3	338619	SYNCRON? OR SYNCHRON? OR (RENDER? OR MAKE OR MAKING OR MADE) () (IDENTICAL? OR SAME? OR EQUIVALENT? OR EQUAL) OR IDENTICAL?
S4	165082	RESYNC? OR COOCCUR? OR CONCUR? OR MATCHING
S5	36399	AUTHENTIC? OR CHALLENGE()RESPONSE? OR CRAM OR LINK()KEY? ? OR KEYPAIR? OR KEY()PAIR?
S6	1180466	CURRENT? OR RECENT? OR NEWEST? OR LATEST? OR LAST OR FRESH
S7	1704584	SAME OR IDENTICAL OR MATCHING
S8	60	S1 AND S2
S9	1	S8 AND (S3 OR S4)
S10	158	S1 AND S5 AND (S3 OR S4)
S11	231	S2 AND (S3 OR S4 OR S6 OR S7)
S12	7	S11 AND S1
S13	15	S2(5N) (S3 OR S4 OR S6 OR S7)
S14	44	(S10 OR S11) AND IC=H04L-009
S15	42	(S10 OR S11) AND MC=(W01-A04X OR W01-A05B OR W01-A07H2)
S16	24	S14 AND S15
S17	2	S8 AND IC=(H04L-009/12 OR H04L-009/32 OR H04L-009/08)
S18	2	S8 AND IC=H04L-009
S19	2	S8 AND MC=(W01-A04X OR W01-A05B OR W01-A07H2)
S20	43	S9 OR S12 OR S13 OR S16 OR S17 OR S18 OR S19
S21	43	IDPAT (sorted in duplicate/non-duplicate order)
S22	43	IDPAT (primary/non-duplicate records only)
S23	1	S2 AND (S3 OR S4) AND S5
S24	8	S2 AND (S3 OR S4) AND (S6 OR S7)
S25	3	S2 AND IC=H04L-009
S26	2	S2 AND MC=(W01-A04X OR W01-A05B OR W01-A07H2)
S27	11	S23:S26
S28	9	S27 NOT S20
S29	9	IDPAT (sorted in duplicate/non-duplicate order)
S30	9	IDPAT (primary/non-duplicate records only)

File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)

(c) 2005 JPO & JAPIO

File 350:Derwent WPIX 1963-2005/UD,UM &UP=200547

(c) 2005 Thomson Derwent

Set	Items	Description
S1	382590	BLUETOOTH? OR BLUE()TOOTH OR WIFI OR WAPR OR WIRELESS OR C-ELLULAR OR MOBILE OR 802()11 OR 802()15 OR PICONET? OR GSM OR UMTS OR WLAN?
S2	1845	ACO OR COF OR (CYPHER? OR CIPHER?) (N) (OFFSET? OR OFF() (SETS OR SET))
S3	338619	SYNCRON? OR SYNCHRON? OR (RENDER? OR MAKE OR MAKING OR MADE) () (IDENTICAL? OR SAME? OR EQUIVALENT? OR EQUAL) OR IDENTICALI?
S4	165082	RESYNC? OR COOCCUR? OR CONCUR? OR MATCHING
S5	36399	AUTHENTIC? OR CHALLENGE()RESPONSE? OR CRAM OR LINK()KEY? ? OR KEYPAIR? OR KEY()PAIR?
S6	1180466	CURRENT? OR RECENT? OR NEWEST? OR LATEST? OR LAST OR FRESH
S7	1704584	SAME OR IDENTICAL OR MATCHING
S8	60	S1 AND S2
S9	1	S8 AND (S3 OR S4)
S10	158	S1 AND S5 AND (S3 OR S4)
S11	231	S2 AND (S3 OR S4 OR S6 OR S7)
S12	7	S11 AND S1
S13	15	S2(5N) (S3 OR S4 OR S6 OR S7)
S14	44	(S10 OR S11) AND IC=H04L-009
S15	42	(S10 OR S11) AND MC=(W01-A04X OR W01-A05B OR W01-A07H2)
S16	24	S14 AND S15
S17	2	S8 AND IC=(H04L-009/12 OR H04L-009/32 OR H04L-009/08)
S18	2	S8 AND IC=H04L-009
S19	2	S8 AND MC=(W01-A04X OR W01-A05B OR W01-A07H2)
S20	43	S9 OR S12 OR S13 OR S16 OR S17 OR S18 OR S19
S21	43	IDPAT (sorted in duplicate/non-duplicate order)
S22	43	IDPAT (primary/non-duplicate records only)

File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)

(c) 2005 JPO & JAPIO

File 350:Derwent WPIX 1963-2005/UD,UM &UP=200547

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22/5/10 (Item 10 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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016530053 **Image available**

WPI Acc No: 2004-688619/200467

Related WPI Acc No: 2004-688616; 2004-697572; 2004-698028

XRPX Acc No: N04-545506

Authentication providing method for use in wireless communication network e.g. LAN, involves synchronously regenerating authentication key at two network nodes based upon node identifier information

Patent Assignee: NEW MEXICO TECH RES FOUND (NEWM-N)

Inventor: SOLIMAN H

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20040179690	A1	20040916	US 2003387711	A	20030313	200467 B
			US 2003448989	A	20030530	

Priority Applications (No Type Date): US 2003448989 A 20030530; US 2003387711 A 20030313

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20040179690	A1	36	H04L-009/00	CIP of application US 2003387711
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Abstract (Basic): US 20040179690 A1

NOVELTY - The method involves providing a node identifier provided with an address and an initial authentication key, and installing the node identifier at one network node. The node identifier is stored at another network node, and the node identifier information is sent from one network node to the other network node. An authentication key is synchronously regenerated at two network nodes based upon node identifier information.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a network of providing secure authentication between wireless communication network nodes.

USE - Used for providing authentication between wireless communication network nodes, for exchanging digital data in a wireless communication network e.g. local area network (LAN).

ADVANTAGE - The method facilitates synchronously regenerating the authentication key at two network nodes based upon the node identifier information, thereby providing dynamic secure authentication among wireless communication network nodes. The method allows minimization of wasted bandwidth in wireless communication networks.

DESCRIPTION OF DRAWING(S) - DESCRIPTION OF DRAWING - The drawing shows an overview of a central authority (CA) generating daemons to manage users' dynamic authentication keys.

pp; 36 DwgNo 1a/19

Title Terms: AUTHENTICITY ; METHOD; WIRELESS ; COMMUNICATE; NETWORK; LAN; SYNCHRONOUS ; REGENERATE; AUTHENTICITY ; KEY; TWO; NETWORK; NODE; BASED ; NODE; IDENTIFY; INFORMATION

Derwent Class: T01; W01

International Patent Class (Main): H04L-009/00

File Segment: EPI

22/5/23 (Item 23 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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014511866 **Image available**
WPI Acc No: 2002-332569/200237
XRPX Acc No: N02-261218

Communication authentication method in radio telecommunication system, involves confirming authentication when determined transmitted sequence number is within predetermined limit

Patent Assignee: VODAFONE LTD (VODA-N)
Inventor: HOWARD P T
Number of Countries: 001 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
GB 2365687	A	20020220	GB 200019067	A	20000803	200237 B
GB 2365687	B	20040609	GB 200019067	A	20000803	200438

Priority Applications (No Type Date): GB 200018950 A 20000802

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
GB 2365687	A		23	H04Q-007/38	
GB 2365687	B			H04Q-007/38	

Abstract (Basic): GB 2365687 A

NOVELTY - A sequence of numbers is generated and transmitted between a **UMTS** network and an user services identity module (USIM). Each of the transmitted number is checked before acceptance. **Authentication** is completed, when the determined sequence number is within a predetermined limit.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (a) Telecommunication system;
- (b) Telecommunication network;
- (c) User device for telecommunication method

USE - For **authenticating** communication in radio and **cellular** telecommunication networks (claimed).

ADVANTAGE - The process of checking the value of the sequentially generated numbers, helps to protect against unauthorized network. Subsequent failure of **synchronization** because of failure of freshness check is eliminated.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart of **authentication** process.

pp; 23 DwgNo 2/2

Title Terms: COMMUNICATE; **AUTHENTICITY** ; METHOD; RADIO; TELECOMMUNICATION; SYSTEM; CONFIRM; **AUTHENTICITY** ; DETERMINE; TRANSMIT; SEQUENCE; NUMBER; PREDETERMINED; LIMIT

Derwent Class: W01; W02

International Patent Class (Main): H04Q-007/38

International Patent Class (Additional): **H04L-009/32**

File Segment: EPI

22/5/27 (Item 27 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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013797011 **Image available**
WPI Acc No: 2001-281223/200129
XRPX Acc No: N01-200535

Binary authentication number updating method in cellular telephone system, involves applying block cipher to concatenated binary numbers obtained from original binary numbers to obtain updated binary number

Patent Assignee: QUALCOMM INC (QUAL-N); ROSE G G (ROSE-I)
Inventor: ROSE G G

Number of Countries: 095 Number of Patents: 009
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200105091	A1	20010118	WO 2000US18687	A	20000707	200129 B
AU 200059238	A	20010130	AU 200059238	A	20000707	200129
EP 1197035	A1	20020417	EP 2000945266	A	20000707	200233
			WO 2000US18687	A	20000707	
KR 2002026529	A	20020410	KR 2002700259	A	20020108	200267
CN 1360773	A	20020724	CN 2000810156	A	20000707	200269
JP 2003504959	W	20030204	WO 2000US18687	A	20000707	200320
			JP 2001510185	A	20000707	
US 6529487	B1	20030304	US 99350213	A	19990709	200320
US 20030142644	A1	20030731	US 99350213	A	19990709	200354
			US 2002306242	A	20021126	
BR 200012231	A	20040803	BR 200012231	A	20000707	200454
			WO 2000US18687	A	20000707	

Priority Applications (No Type Date): US 99350213 A 19990709; US 2002306242 A 20021126

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
WO 200105091	A1 E	29	H04L-009/32	
Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW				
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW				
AU 200059238	A		H04L-009/32	Based on patent WO 200105091
EP 1197035	A1 E		H04L-009/32	Based on patent WO 200105091
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI				
KR 2002026529	A		H04L-009/32	
CN 1360773	A		H04L-009/32	
JP 2003504959	W	33	H04L-009/32	Based on patent WO 200105091
US 6529487	B1		H04K-001/00	
US 20030142644	A1		H04Q-007/00	Cont of application US 99350213 Cont of patent US 6529487
BR 200012231	A		H04L-009/32	Based on patent WO 200105091

Abstract (Basic): WO 200105091 A1

NOVELTY - Maximal length shift register algorithm or pseudo random noise generation algorithm is applied to the 8 most significant bits of the original binary number and the least significant bits. The resultant bits are concatenated. A SKIPJACK block cipher is applied to the concatenated binary numbers to obtain the updated binary number.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (a) Cellular base station;
- (b) Cellular system

USE - For authentication of mobile stations by base stations in the cellular telephone system such as advanced mobile phone service (AMPS) system, IS-54, GSM system, IS-95 system.

ADVANTAGE - The block cipher encryption function and linear feedback shift register function ensure transmission of random challenge value to the **mobile** station without losing unpredictability of the true random number and can be simply and economically **synchronized** across the **cellular** system.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of two Galois shift registers used for updating binary number.

pp; 29 DwgNo 3/5

Title Terms: BINARY; **AUTHENTICITY** ; NUMBER; UPDATE; METHOD; **CELLULAR** ; TELEPHONE; SYSTEM; APPLY; BLOCK; CIPHER; CONCATENATED; BINARY; NUMBER; OBTAIN; ORIGINAL; BINARY; NUMBER; OBTAIN; UPDATE; BINARY; NUMBER

Derwent Class: W01; W02

International Patent Class (Main): H04K-001/00; **H04L-009/32** ; H04Q-007/00

International Patent Class (Additional): G06F-015/00; **H04L-009/06** ; H04Q-007/38

File Segment: EPI

22/5/28 (Item 28 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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013662808 **Image available**
WPI Acc No: 2001-147020/200115
XRPX Acc No: N01-107677

Communications systems method and arrangements for secure linking of entity authentication and ciphering key generation conducts entity authentication process using cryptography key when a ciphering offset value is generated

Patent Assignee: TELEFONAKTIEBOLAGET ERICSSON L M (TELF)

Inventor: SMEETS B J M; SMEETS B

Number of Countries: 095 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200101630	A1	20010104	WO 2000EP5742	A	20000621	200115 B
AU 200058176	A	20010131	AU 200058176	A	20000621	200124
BR 200011870	A	20020305	BR 200011870	A	20000621	200225
			WO 2000EP5742	A	20000621	
EP 1190526	A1	20020327	EP 2000943854	A	20000621	200229
			WO 2000EP5742	A	20000621	
CN 1371565	A	20020925	CN 2000812025	A	20000621	200305
JP 2003503896	W	20030128	WO 2000EP5742	A	20000621	200309
			JP 2001506186	A	20000621	
US 6633979	B1	20031014	US 99344387	A	19990625	200368

Priority Applications (No Type Date): US 99344387 A 19990625

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200101630 A1 E 22 H04L-009/32

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP
KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT
RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200058176 A Based on patent WO 200101630

BR 200011870 A H04L-009/32 Based on patent WO 200101630

EP 1190526 A1 E H04L-009/32 Based on patent WO 200101630

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI

CN 1371565 A H04L-009/32

JP 2003503896 W 28 H04L-009/08 Based on patent WO 200101630

US 6633979 B1 G06F-001/24

Abstract (Basic): WO 200101630 A1

NOVELTY - The method uses an authentication pprocess to generate a **ciphering offset** value (50). Each node (12,14) stores offset value and uses it to generate subsequent ciphering keys employed to encrypt data transmitted between the nodes, so a logical relationship between the **latest** entity authentication process and subsequently generated ciphering keys increasing the security and reduce overheads.

DETAILED DESCRIPTION - Independent claims describe an arrangement for generating ciphering keys in a communication node and a system.

USE - As a method and arrangements for secure linking of entity authentication and ciphering key generation.

ADVANTAGE - Can enhance security in any communication system including a **mobile** telecommunications system, for example, a global system for **mobile** (**GSM**) communications syatem.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram depicting an improved authentication process and arrangement associated with secure communications system, for example.

the **ciphering offset** value (50)
the nodes (12 and 14)

pp; 22 DwgNo 4/7

Title Terms: COMMUNICATE; SYSTEM; METHOD; ARRANGE; SECURE; LINK; ENTITY;
AUTHENTICITY; CIPHER; KEY; GENERATE; CONDUCTING; ENTITY; AUTHENTICITY;
PROCESS; KEY; OFFSET; VALUE; GENERATE

Derwent Class: W01; W02

International Patent Class (Main): G06F-001/24; **H04L-009/08 ; H04L-009/32**

International Patent Class (Additional): H04Q-007/38

File Segment: EPI

22/5/32 (Item 32 from file: 350)
 DIALOG(R) File 350:Derwent WPIX
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010742798 **Image available**
 WPI Acc No: 1996-239753/199624
 XRPX Acc No: N96-200648

Secure identification method for mobile user in communication with distributed users - encrypting user's identity and/or his password and synchronisation indication under secret one-way function and sending encrypted message to user's home authority where he is registered

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC); IBM CORP (IBMC)

Inventor: TSUDIK G

Number of Countries: 027 Number of Patents: 015

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9613920	A1	19960509	WO 94EP3542	A	19941027	199624 B
EP 788688	A1	19970813	WO 94EP3542	A	19941027	199737
			EP 95900091	A	19941027	
JP 9511888	W	19971125	WO 94EP3542	A	19941027	199806
			JP 96514266	A	19941027	
HU 77782	T	19980828	WO 94EP3542	A	19941027	199844
			HU 981058	A	19941027	
KR 97706669	A	19971103	WO 94EP3542	A	19941027	199844
			KR 97701860	A	19970321	
US 6072875	A	20000606	WO 94EP3542	A	19941027	200033
			US 97845796	A	19970425	
RU 2150790	C1	20000610	WO 94EP3542	A	19941027	200058
			RU 97108167	A	19941027	
KR 211426	B1	19990802	WO 94EP3542	A	19941027	200104
			KR 97701860	A	19970321	
CZ 289189	B6	20011114	WO 94EP3542	A	19941027	200175
			CZ 97881	A	19941027	
CZ 9700881	A3	20011114	WO 94EP3542	A	19941027	200175
			CZ 97881	A	19941027	
CN 1164307	A	19971105	CN 94195191	A	19941027	200320
			WO 94EP3542	A	19941027	
EP 788688	B1	20040121	WO 94EP3542	A	19941027	200410
			EP 95900091	A	19941027	
DE 69433509	E	20040226	DE 94633509	A	19941027	200419
			WO 94EP3542	A	19941027	
			EP 95900091	A	19941027	
CA 2203131	C	20040330	CA 2203131	A	19941027	200424
			WO 94EP3542	A	19941027	
JP 3566298	B2	20040915	WO 94EP3542	A	19941027	200460
			JP 96514266	A	19941027	

Priority Applications (No Type Date): WO 94EP3542 A 19941027

Cited Patents: 4.Jnl.Ref; EP 532227

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9613920	A1	E	32	H04L-009/32	
					Designated States (National): BR CA CN CZ HU JP KR PL RU US
					Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
EP 788688	A1	E			Based on patent WO 9613920
					Designated States (Regional): AT BE CH DE ES FR GB IT LI NL SE
JP 9511888	W		39	H04L-009/32	Based on patent WO 9613920
HU 77782	T				Based on patent WO 9613920
KR 97706669	A				Based on patent WO 9613920
US 6072875	A			H04M-001/66	Cont of application WO 94EP3542
RU 2150790	C1			H04L-009/32	Based on patent WO 9613920
KR 211426	B1			H04L-009/32	
CZ 289189	B6			H04L-009/32	Previous Publ. patent CZ 9700881
					Based on patent WO 9613920
CZ 9700881	A3			H04L-009/32	Based on patent WO 9613920

CN 1164307	A	H04L-009/32	Based on patent WO 9613920
EP 788688	B1 E	H04L-009/32	Based on patent WO 9613920
Designated States (Regional): AT BE CH DE ES FR GB IT LI NL SE			
DE 69433509	E	H04L-009/32	Based on patent EP 788688
			Based on patent WO 9613920
CA 2203131	C E	H04L-009/32	Based on patent WO 9613920
JP 3566298	B2	16 H04L-009/32	Previous Publ. patent JP 9511888
			Based on patent WO 9613920

Abstract (Basic): WO 9613920 A

The method for secure identification of a **mobile** user involves a **synchronisation** indication, pref. applying a time interval indication **synchronising** the user's input in a foreign domain with his home domain. At least one of the group consisting of an identifier, the time interval or other **synchronisation** indication and the users password or other secret **authenticator** are encrypted under a secret function, particularly a one-way function, and an encrypted message is built. The user's home domain is then indicated to the foreign domain from which the user intends to communicate.

The encrypted message is transmitted to the user's home domain. The encrypted message is evaluated in the user's home domain to determine the true identity of the user.

ADVANTAGE - Minimizes or avoids traceability and identification of **mobile** user by assigning temporary, simple, one-time aliases to travelling users. Method is efficient and not specific to particular hardware.

Dwg.3/5

Title Terms: SECURE; IDENTIFY; METHOD; **MOBILE** ; USER; COMMUNICATE; DISTRIBUTE; USER; USER; IDENTIFY; PASSWORD; **SYNCHRONISATION** ; INDICATE; SECRET; ONE; WAY; FUNCTION; SEND; ENCRYPTION; MESSAGE; USER; HOME; AUTHORISE; REGISTER

Derwent Class: P85; W01

International Patent Class (Main): **H04L-009/32** ; H04M-001/66

International Patent Class (Additional): G06F-012/14; G06F-015/00; G06K-019/07; G09C-001/00; H04Q-007/38

File Segment: EPI; EngPI

22/5/33 (Item 33 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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009594417

WPI Acc No: 1993-287963/199336

XRPX Acc No: N93-221527

Rolling key re- synchronisation for cellular verification and validation system - setting network rolling key input to selected value and commanding mobile station to set it's rolling key input to same value

Patent Assignee: ERICSSON GE MOBILE COMMUNICATIONS (TELF)

Inventor: RAITH K A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5241598	A	19930831	US 91704133	A	19910522	199336 B

Priority Applications (No Type Date): US 91704133 A 19910522

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5241598	A	34	H04L-009/08	

Abstract (Basic): US 5241598 A

A method for the re- **synchronisation** of a rolling key in a radio network providing service to a **mobile** station. The rolling key is used as an input value among a number of input values to an **authentication** processor in each of the network and the **mobile** station. The method involves setting the network rolling key input value to a selected value. The **mobile** station commanded to set it's rolling key input value to the selected value. The selected value is a value known to the network and the **mobile** station and is selected from a group consisting of a fixed or a variable value or a combination the two.

USE/ADVANTAGE - **Authentication** of connection at hands-free or initial channel designation. Reduced **cellular** fraud.

Dwg.1/10

Title Terms: ROLL; KEY; **SYNCHRONISATION** ; **CELLULAR** ; VERIFICATION; VALID; SYSTEM; SET; NETWORK; ROLL; KEY; INPUT; SELECT; VALUE; COMMAND; **MOBILE** ; STATION; SET; ROLL; KEY; INPUT; VALUE

Index Terms/Additional Words: **ROLL_KEY_SYNCHR** ONRollin g key ; KEY; **SYNCHRON**

Derwent Class: W01; W02

International Patent Class (Main): **H04L-009/08**

International Patent Class (Additional): **H04L-009/32**

File Segment: EPI

Set	Items	Description
S1	1069	AU=(PERSSON J? OR PERSSON, J?)
S2	147	AU=(SMEETS B? OR SMEETS, B?)
S3	290	AU=(MELIN T? OR MELIN, T?)
S4	0	S1 AND S2 AND S3
S5	62	S1:S3 AND (CYPHER? OR CIPHER? OR ENCIPHER? OR ENCYIPHER? OR ENCRYPT? OR CRYPTO? OR ACO OR AUTHENTICAT?)
S6	0	S5 AND (SYNC OR SYNCs OR SYNCHRON? OR SYNCRON? OR MATCHING OR ASYNC?)
S7	0	S5 AND ACO
S8	0	S1:S3 AND ACO
S9	40	S5 AND AUTHENTICAT?
S10	16	RD (unique items)
S11	25	RD S5 (unique items)
S12	24	S11 NOT PY>2000
File	2:INSPEC 1969-2005/Jul W3	(c) 2005 Institution of Electrical Engineers
File	6:NTIS 1964-2005/Jul W3	(c) 2005 NTIS, Intl Cpyrght All Rights Res
File	8:EI Compendex(R) 1970-2005/Jul W3	(c) 2005 Elsevier Eng. Info. Inc.
File	34:SciSearch(R) Cited Ref Sci 1990-2005/Jul W3	(c) 2005 Inst for Sci Info
File	64:Environmental Engineering Abstracts 2005/May	(c) 2005 CSA.
File	65:Inside Conferences 1993-2005/Jul W4	(c) 2005 BLDSC all rts. reserv.
File	94:JICST-EPlus 1985-2005/Jun W1	(c)2005 Japan Science and Tech Corp (JST)
File	95:TEME-Technology & Management 1989-2005/Jun W3	(c) 2005 FIZ TECHNIK
File	99:Wilson Appl. Sci & Tech Abs 1983-2005/Jun	(c) 2005 The HW Wilson Co.
File	636:Gale Group Newsletter DB(TM) 1987-2005/Jul 25	(c) 2005 The Gale Group
File	647:CMP Computer Fulltext 1988-2005/Jul W2	(c) 2005 CMP Media, LLC
File	674:Computer News Fulltext 1989-2005/Jul W3	(c) 2005 IDG Communications
File	275:Gale Group Computer DB(TM) 1983-2005/Jul 26	(c) 2005 The Gale Group
File	239:Mathsci 1940-2005/Sep	(c) 2005 American Mathematical Society

12/5/3 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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6031439 INSPEC Abstract Number: B9811-6120B-020, C9811-6130S-018

Title: Unconditionally secure group authentication

Author(s): Van Dijk, M.; Gehrman, C.; **Smeets, B.**

Author Affiliation: Philips Res. Lab., Eindhoven, Netherlands

Journal: Designs, Codes and Cryptography vol.14, no.3 p.281-96

Publisher: Kluwer Academic Publishers,

Publication Date: Sept. 1998 Country of Publication: Netherlands

ISSN: 0925-1022

SICI: 0925-1022(199809)14:3L.281:USGA;1-D

Material Identity Number: 0660-98006

U.S. Copyright Clearance Center Code: 0925-1022/98/\$9.50

Language: English Document Type: Journal Paper (JP)

Treatment: Theoretical (T)

Abstract: Group **authentication** schemes as introduced by Boyd (1989) and by Desmedt and Frankel (1992) are **cryptographic** schemes in which only certain designated groups can provide messages with **authentication** information. We study unconditionally secure group **authentication** schemes based on linear perfect secret sharing and **authentication** schemes, for which we give expressions for the probabilities of successful attacks. Furthermore, we give a construction that uses maximum rank distance codes. (18 Refs)

Subfile: B C

Descriptors: **cryptography** ; data privacy; group theory; linear codes; matrix algebra; message **authentication** ; probability

Identifiers: unconditional security; group **authentication** ; **cryptographic** schemes; message **authentication** ; linear perfect secret sharing; probabilities; attacks; maximum rank distance codes

Class Codes: B6120B (Codes); B0290H (Linear algebra); B0250 (Combinatorial mathematics); C6130S (Data security); C4140 (Linear algebra); C1160 (Combinatorial mathematics)

Copyright 1998, IEE

12/5/7 (Item 7 from file: 2)

DIALOG(R)File 2:INSPEC

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5234395 INSPEC Abstract Number: B9605-6120B-111

Title: On the cardinality of systematic authentication codes via error-correcting codes

Author(s): Kabatianskii, G.A.; **Smeets, B.** ; Johansson, T.

Author Affiliation: Inst. of Inf. Transmission Problems, Acad. of Sci., Moscow, Russia

Journal: IEEE Transactions on Information Theory vol.42, no.2 p. 566-78

Publisher: IEEE,

Publication Date: March 1996 Country of Publication: USA

CODEN: IETTAW ISSN: 0018-9448

SICI: 0018-9448(199603)42:2L:566:CSAC;1-L

Material Identity Number: I044-96004

U.S. Copyright Clearance Center Code: 0018-9448/96/\$05.00

Document Number: S0018-9448(96)01185-6

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P); Theoretical (T)

Abstract: In both open and private communication the participants face potential threats from a malicious enemy who has access to the communication channel and can insert messages (impersonation attack) or alter already transmitted messages (substitution attack). **Authentication codes** (A-codes) have been developed to provide protection against these threats. In this paper we introduce a new distance, called the **authentication distance** (A-distance), and show that an A-code can be described as a code for the A-distance. The A-distance is directly related to the probability $P/\text{sub } S/$ of success in a substitution attack. We show how to transform an error-correcting code into an A-code and vice versa. We further use these transformations to provide both upper and lower bounds on the size of the information to be **authenticated**, and study their asymptotic behavior. As examples of obtained results, we prove that the cardinality of the source state space grows exponentially with the number of keys provided $P/\text{sub } S/ > P/\text{sub } I/$, we generalize the square-root bound given by Gilbert, MacWilliams, and Sloane in 1979, and we provide very efficient constructions using concatenated Reed-Solomon codes. (24 Refs)

Subfile: B

Descriptors: concatenated codes; error correction codes; message **authentication**; probability; public key **cryptography**; Reed-Solomon codes

Identifiers: cardinality; systematic **authentication codes**; error-correcting codes; private communication; open communication; communication channel; impersonation attack; substitution attack; A-codes; threats; **authentication distance**; A-distance; probability; lower bounds; upper bounds; asymptotic behavior; source state space; square-root bound; concatenated Reed-Solomon codes; universal hash functions; information integrity

Class Codes: B6120B (Codes); B0240Z (Other topics in statistics)

Copyright 1996, IEE

12/5/10 (Item 10 from file: 2)

DIALOG(R) File 2:INSPEC

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4820652 INSPEC Abstract Number: B9412-6120B-107, C9412-6130S-050

Title: Bounds on the probability of deception in multiple authentication

Author(s): **Smeets, B.**

Author Affiliation: Dept. of Inf. Theory, Lund Univ., Sweden

Journal: IEEE Transactions on Information Theory vol.40, no.5 p. 1586-91

Publication Date: Sept. 1994 Country of Publication: USA

CODEN: IETTAW ISSN: 0018-9448

U.S. Copyright Clearance Center Code: 0018-9448/94/\$04.00

Language: English Document Type: Journal Paper (JP)

Treatment: Theoretical (T)

Abstract: The frequently assumed "freshness" constraint on the source states in multiple **authentication** schemes is not necessary if one allows the encoding rule to change between subsequent transmissions. In the paper it is shown that the main existing lower bounds on the probabilities of successful attack on multiple **authentication** schemes also hold for this new setup. Furthermore, Stinson's (1988) bound for the substitution attack is strengthened. (20 Refs)

Subfile: B C

Descriptors: encoding; message **authentication** ; probability

Identifiers: probability of deception; multiple **authentication** ; freshness constraint; source states; encoding rule; subsequent transmissions; lower bounds; successful attack; Stinson's bound; substitution attack

Class Codes: B6120B (Codes); B0240Z (Other and miscellaneous); C6130S (Data security); C1140Z (Other and miscellaneous); C1260 (Information theory)

12/5/22 (Item 1 from file: 239)

DIALOG(R) File 239:Mathsci

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02928282 MR 99h#94055

On message and key equivocation in secrecy systems.

Shtarkov, Yu. M.

Yukhanson, T.

Smits, B. Dzh. M.

(Johansson, Thomas; **Smeets, Bernard J. M.**)

Problems Inform. Transmission

Problems of Information Transmission, 1998, 34, no. 2, 197--206

ISSN: 0032-9460 CODEN: PRITA9

Source: Problemy Peredachi Informatsii, (1998),, 34, no. 2,,

117--127 ISSN: 0555-2923

Language: English

Original Language: Russian Original Summary Language: Russian

Document Type: Journal; Journal Translation

Journal Announcement: 9905

Subfile: MR (Mathematical Reviews) AMS

Abstract Length: SHORT (5 lines)

Summary (translated from the Russian): ``We study two methods (including randomization) for increasing the uncertainty concerning $n \geq 1$ transmitted messages and the key used. In addition, we show that the methods, which are equally effective for $n=1$, may perform differently for $n>1$.''

Reviewer: Summary

Reviewed from: Reviewed from original

Review Type: Abstract

Descriptors: *94A60 -Information and communication, circuits-Communication, information- **Cryptography** (See also 11T71, 68P25)

Set	Items	Description
S1	270	AU=(PERSSON J? OR PERSSON, J?)
S2	112	AU=(SMEETS B? OR SMEETS, B?)
S3	31	AU=(MELIN T? OR MELIN, T?)
S4	3	S1 AND S2 AND S3
S5	71	S1:S3 AND (CYPHER? OR CIPHER? OR ENCIPHER? OR ENCYIPHER? OR ENCRYPT? OR CRYPTO? OR ACO OR AUTHENTICAT?)
S6	39	S5 AND IC=H04L-009
S7	3	S6 AND (SYNC OR SYNCN OR SYNCHRON? OR SYNCHRON? OR MATCHING OR ASYNCH?)
S8	2	S6 AND ACO
S9	3	S4 OR S7 OR S8
File 344:Chinese Patents Abs Aug 1985-2005/May		
(c) 2005 European Patent Office		
File 347:JAPIO Nov 1976-2005/Feb(Updated 050606)		
(c) 2005 JPO & JAPIO		
File 348:EUROPEAN PATENTS 1978-2005/Jul W03		
(c) 2005 European Patent Office		
File 349:PCT FULLTEXT 1979-2005/UB=20050721,UT=20050714		
(c) 2005 WIPO/Univentio		
File 350:Derwent WPIX 1963-2005/UD,UM &UP=200547		
(c) 2005 Thomson Derwent		

9/5/3 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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013924132 **Image available**
WPI Acc No: 2001-408345/200143
XRPX Acc No: N01-302165

Synchronization of authentication ciphering offset e.g. for
Bluetooth applications to avoid devices generating out of
synchronization values

Patent Assignee: TELEFONAKTIEBOLAGET ERICSSON L M (TELF)

Inventor: MELIN T ; PERSSON J ; SMEETS B

Number of Countries: 094 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200141358	A2	20010607	WO 2000EP11780	A	20001127	200143 B
AU 200123595	A	20010612	AU 200123595	A	20001127	200154
EP 1234405	A2	20020828	EP 2000987297	A	20001127	200264
			WO 2000EP11780	A	20001127	
JP 2003516097	W	20030507	WO 2000EP11780	A	20001127	200331
			JP 2001542507	A	20001127	
CN 1433610	A	20030730	CN 2000818756	A	20001127	200365

Priority Applications (No Type Date): US 2000632933 A 20000804; US 99168375
P 19991202

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200141358 A2 E 30 H04L-009/32

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA
CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP
KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT
RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200123595 A H04L-009/32 Based on patent WO 200141358

EP 1234405 A2 E H04L-009/32 Based on patent WO 200141358

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT
LI LT LU LV MC MK NL PT RO SE SI TR

JP 2003516097 W 38 H04L-009/08 Based on patent WO 200141358

CN 1433610 A H04L-009/32

Abstract (Basic): WO 200141358 A2

NOVELTY - An authentication ciphering offset (ACO) is
generated as a function of several parameters. Several of the
parameters is derived from earlier-computed values of the ACO .

USE - For communication system e.g. Bluetooth type application
where device s experience non-controllable delays in an interface
between an real-time layer and a non real-time layer.

ADVANTAGE - Enables each device to avoid generating an ACO value
that is out of synchronization with a counterpart ACO value
generated in another communication device.

DESCRIPTION OF DRAWING(S) - The drawing shows a block diagram of
two devices communicating using e.g. Bluetooth.

pp; 30 DwgNo 1/7

Title Terms: SYNCHRONISATION ; AUTHENTICITY; CIPHER ; OFFSET; APPLY;
AVOID; DEVICE; GENERATE; SYNCHRONISATION ; VALUE

Derwent Class: W01

International Patent Class (Main): H04L-009/08 ; H04L-009/32

International Patent Class (Additional): H04L-009/12

File Segment: EPI

Your SELECT statement is:

s (bluetooth or blue()tooth) (5n) (afo or cof or cypher()offset) (5n) (sync
or synchron? or synchroni? or syncs)

Items	File
-----	-----
Examined 50	files
Examined 100	files
Examined 150	files
Examined 200	files
Examined 250	files
Examined 300	files
Examined 350	files
Examined 400	files
Examined 450	files
Examined 500	files
Examined 550	files

No files have one or more items; file list includes 571 files.
One or more terms were invalid in 3 files.

Set	Items	Description
S1	3	(BLUETOOTH OR BLUE()TOOTH) AND (AFO OR COF OR (CIPHER? OR - CYPHER?) (N) (OFF()SET OR OFFSET)) (5N) (SYNC OR SYNCHRON? OR SYN- CRONI? OR SYNC)
File 342:Derwent Patents Citation Indx 1978-05/200545		
(c) 2005 Thomson Derwent		
File 349:PCT FULLTEXT 1979-2005/UB=20050721,UT=20050714		
(c) 2005 WIPO/Univentio		
File 351:Derwent WPI 1963-2005/UD,UM &UP=200547		
(c) 2005 Thomson Derwent		